Amendments to the Drawings

The attached Replacement Drawing Sheet containing Fig. 22 replaces the previously-filed drawing sheet containing Fig. 22 of this Application. An Annotated Drawing Sheet containing a marked-up version of amended Fig. 22 is also attached.

Remarks

Prior to this Amendment, Claims 1-30 were pending in the present application. By this Amendment, Applicant has amended Claims 1, 14, 15, 16, and 28. No new matter was added by this Amendment. Applicant respectfully requests reexamination and reconsideration of the pending claims in view of the amendments and remarks contained herein.

I. Interview Summary

On October 24, 2007, Applicant's representative and Examiner Faber conducted an interview regarding the present application. During the interview, the following proposed amendment to claim 1 was discussed:

1. A method of generating a document, the method comprising:

establishing a software architecture for a set of rules, where each rule in the set of rules is configured to be embedded in one or more computer processable documents, the documents consisting of a plurality of components, the set of rules defining content to be included in the documents; ~~and~~

creating a dynamic document structure that can resolve to one or more instances of a document and that is configured to include document content including one or more embedded rules based on the software architecture for the set of rules; and

resolving the dynamic document structure by executing the one or more embedded rules included in the document content.

The Applicant asserted that the Office had misconstrued the term "rules," in essence adopting a definition that is inconsistent with the guidelines on claim construction set forth in the MPEP, which requires that any interpretation of the prior art and the claims proposed by the Office be reasonable and consistent with the interpretation that those skilled in the art would reach. *See, e.g.* MPEP § 2111. In particular, the Applicant noted that the "rules" in the cited art, were simply business rules that might, for example, take the form of a written list in a document. Such rules might, for example, dictate the times that an employee might be required to begin work at an employer, describe certain procedures to be followed to perfect a security interest, or a variety of other regulations or requirements. However, none of these rules take the form of rules that are embedded in a computer processable document (as opposed to be simply existing as written words) and configured to be executed by a computer during the process of resolving a dynamic document structure that resolves to one or more instances of a document, where the rules determine what content is put in each instance of the document.

During the interview, the Examiner also indicated that the Poole reference was, in essence, written in a complicated fashion and difficult to understand. For the record, Applicant notes that its current attorney did not write the Poole patent, but the Examiner who allowed the Poole patent to issue deemed it to have met all the requirements of Section 112, by virtue of its issuance. Applicant also notes that one of the current co-inventors of the Poole patent is a co-inventor of the current application. The Applicant is familiar with the technology in the Poole reference and it does not disclose what has been asserted.

No agreement was reached with the Examiner.

II. Claim Rejections – 35 U.S.C. § 102(b)

Claims 1, 12-13, 16-17, and 28-30 stand rejected under 35 U.S.C § 102(b), as being anticipated by United States Patent No. 6,006,242, issued to Poole et al. (hereinafter referred to as "Poole"). As discussed below in more detail, Poole does not teach or suggest the subject matter defined by these claims.

According to the Office, Poole teaches establishing a software architecture for a set of rules to be embedded in documents that consist of a plurality of components. Applicant asserts that (1) the portions of Poole referenced by the Office as disclosing the above claim elements do not disclose establishing a software architecture for a set of rules to be embedded in documents and (2) Poole, taken its in entirely, does not teach or suggest establishing a software architecture for a set of rules to be embedded in documents where those rules define content to be included in the documents, as recited in amended Claim 1.

Before further explaining the distinction between the claimed subject matter and the subject matter disclosed by Poole, it is useful to note that not all "rules" are the same. For example, in the Background of the Invention Section of Poole, the use of rules in the prior art is explained as follows:

> The system disclosed in Miller . . . employ[s] a conventional relational database scheme to test customer-specific input information against a table of rule sets which, in turn, are directly linked to various boilerplate clauses. A rule set is assigned to each insurance policy clause and each endorsement clause. The insurance and endorsement clauses and rule sets are stored in a memory . . . . Each rule set includes at least one rule that must be satisfied in order to include the associated

> clause in the document. After entering customer-specific parameters into the computer, . . . each and every rule in each and every rule set is evaluated to determine whether a particular clause is to be included in the document. In order to print a document, a printer database containing a redundant copy of each insurance and endorsement policy clause is utilized to supply the appropriate clauses . . . .
>
> Although the system disclosed in Miller provides for some degree of improvement . . . , there remains a . . . need . . . for a flexible inferencing capability that dynamically determines content to be included in a document, wherein direct linkage between content and content determining rules is obviated. The present invention fulfills these and other needs.

Thus, in Poole an improvement in dealing with rules was made by eliminating a direct linkage between the content and the content determining rules. The elimination of the direct link involved the use of catalogs. *See, e.g.,* Abstract of Poole. In the system disclosed by Poole, a document developer manually specifies entity references to be included in a document based on the document developer's **own** knowledge of the business, legal, and/or governmental rules and regulations that govern a particular document. Col. 5, lines 1-7 of Poole. The entity references specified by the document developer are then resolved using catalogs. Col. 19, lines 9 of Poole. In particular, the document generation system disclosed in Poole attempts to find a match between an entity reference specified by the document developer and an entity reference specified in a catalog. Col. 6, lines 55-59 of Poole. Once a match is found, the entity reference is resolved according to the resolution strategy or process specified in the matching catalog entry through the use of an inference engine. Col. 6, lines 64-67 and Col. 7, line 1 of Poole. During the entity reference resolution process, the inference engine determines what rules apply and loads rules from the knowledge base. Col. 20, lines 27-36 and Col. 42, lines 44-45 of Poole.

In contrast, the claims at issue define a different approach. At a high level, the difference can be stated as such, in Poole the rules are in the knowledge base, not in the actual documents. Thus, embodiments of the present application provide a software architecture for rules that can be embedded in documents. The Office cites to col. 2, lines 15-16 and 41-48, and col. 80 lines 22-23 of Poole as disclosing a software architecture. These portions of Poole disclose, respectively, a system for dynamically constructing documents and the fact that software embodying document construction software can be stored on a CD-ROM. However, neither Poole as a whole or the cited section of Poole teach embedding rules in a document as claimed so

that the rules are executed during a resolution process performed with a computer processor with the result being an instance of a specific document, in accordance with, for example, claim 1.

Next, the Office cites to col. 5, lines 3-24, as, apparently, disclosing each rule in the set of rules being configured to be embedded in the documents where the rules define content to be included in the documents.

If one continues beyond the portion cited by the Examiner, the Poole patent explains how it deals with rules and resolution.

> The block diagram of FIG. 2 illustrates one embodiment of an entity reference resolution process. A document developer interacts with a user interface 20 to select entity references representative of content to be included in a document. An unresolved entity reference 24 defined in a document instance 22, such as entity reference &A shown in FIG. 1, is initially compared against a Catalog 26 containing pairs of entity identifiers and associated resolution strategies. **A comparison is made between the name of the entity reference to be resolved and the entity identifiers contained in the Catalog 26. Upon a successful match, the resolution strategy associated with the matched entity identifier in the Catalog 28 is effectuated by use of an Inference Engine 28.** The Inference Engine 28 resolves the entity so as to return a resolved entity 30, also termed a component. Other unresolved entity references 24 contained in the document instance 22 are similarly resolved and typically organized as a linearized stream 40 of resolved entity references or components. Upon resolving all of the entity references contained in a document instance 22, a resolved document instance is thereby produced. A document of a desired structure and format style may then be produced as a printed or electronic document or form.

Col. 5, lines 40-62 of Poole (emphasis added). As should be apparent, the resolution process involves interaction with a catalog, not with rules embedded in the document. Thus, Poole does not teach what Applicant has claimed.

The Office also cites to col. 7, lines 28-60 of Poole to support its position, the cited portion plus the following paragraph indicates that

> Turning now to FIG. 5, there is illustrated in block diagram form a depiction illustrating the methodology by which a document is dynamically constructed in accordance with one embodiment of the present invention. A document, such as document instance-1 62 or document instance-2 64, may be defined from text and graphical components accessed from a Knowledge Base 31. **As previously mentioned, the Knowledge Base 31 further includes various document type definitions (DTDs), catalogs, rules, and links.** In the embodiment illustrated in

> FIG. 5, the Knowledge Base 31 is defined to include document components A through F, which, in turn, are linked to a business or governmental regulation source, such as regulation-Y 80 or regulation-Z 90. Also illustrated is a Catalog 26 within which is stored pairs of entity identifiers (component identifiers) and corresponding entity reference resolution strategies. Entity 1 stored in the Catalog 26, for example, is associated with an entity resolution strategy that is implemented by a Store Manager named INFENG, which is a short form of the name Inference Engine. The document instance-1 62 is defined to include entity references &1, &2, and &4. During the document construction procedure, the entity reference &1 is read from the document instance-1 62 and compared against the entries of the Catalog 26. A match is determined between the entity reference &1 and the ENTITY 1 identifier stored in the Catalog 26. The reference to INFENG in the associated resolution strategy indicates that entity reference &1 is to be resolved by employment of an Inference Engine 28. The Inference Engine 28 resolves entity reference &1 to document component-A 66 which is linked to paragraph-1 94 of regulation Z-90. The content of regulation-Z 90 may then be incorporated into a final document 65 by referencing document component-A 66.
>
> By way of further example, the entity reference &2 of the document instance-1 62 is resolved by comparing entity reference &2 with the entity identifiers stored in the Catalog 26. Matching entity identifier ENTITY 2 indicates that entity reference &2 is to be resolved by implementing the Store Manager named FILE 54. The Store Manager FILE 54 resolves entity reference &2 by returning document component-B 68 which is linked to a file containing section-1 92 of regulation-Z 90 as. The content of section-1 92 of regulation-Z 90 may then be incorporated into a final document 65 by referencing document component-B 68.

(emphasis added).

As should be apparent from the above, the Knowledge Base 31 includes the rules, not the documents ("As previously mentioned, the Knowledge Base 31 further includes [1] various document type definitions (DTDs), [2] catalogs, [3] rules, and [4] links.")

The Office also cites to col. 12, lines 10-24 and asserts that this portion discloses "Documents Properties that are properties of a document or rules to follow. Such properties (rules) include the page margins, base font, page orientation, and paper size to follow." The Office goes on to indicate that "these properties are embedded in the document."

Applicant readily admits that page margins, fonts, page orientation, and paper size are old. Applicant also admits that one might properly refer to margins, fonts, page orientation, and

paper size as document "properties." However, it requires a complete distortion of the teachings of Poole and a large leap in logic to equate the actual margins, fonts, page orientation, and paper size, which are admittedly inherent in things properly characterized as a "document," with "rules," particularly when 1) the words "property" and "rule" are not synonyms and 2) Poole itself describes its own "rules" in a different manner.

Regarding the Office's equation of the words "property" and "rule," the word "property" generally refers to an attribute or quality of a thing. In contrast, the word "rule" generally refers to a principle or prescription that governs action. It is improper to use these terms interchangeably because they clearly have different meanings. A thing may possess a property after a rule has been applied, but something that has a property does not necessarily possess a rule. Thus, documents that inherently possess properties such as margins, do NOT inherently possess rules.

Regarding the rules described in Poole, as noted above and as shown in Fig. 19, the rules used in Poole's document generation system are stored in the knowledge base. As explained by Poole,

> [t]he dataflow diagram of FIG. 19 shows the Inference Engine Processor 300 as a single process that takes an initial request from an Application 301 to begin processing, and makes periodic requests to the Application 301 and Knowledge Base 302 to complete its task. In FIG. 20, there is depicted the basic processes associated with the operations of the Inference Engine 300. The Inference Engine 300 consists of three main processes. The Application Interface 304 takes a name that corresponds both to a text file containing the rules to execute and passes that name along to the Parser 306. The Parser 306 reads the text file and converts the text into an executable Rule Network 305 that is returned to the controlling Application Interface 304. The Rule Name 307 to execute and the Rule Network 305 are then passed to the Evaluate Rule Processor 309, which begins evaluating rules in the Rule Network 305 beginning with the rule corresponding to Rule Name 307.

Col. 42, lines 46-62.

Clearly, Poole discloses storing rules in the knowledge base[1] and makes no mention whatsoever that the rules are embedded in a document.

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[1] *See also*, "'Knowledge Base' is a term that refers to a collection of documents, document components, document type definitions, catalogs, **rules**, and links. Col. 4, lines 54-56 (emphasis added); "As is indicated at step 101, knowledge is entered into the Knowledge Base in the form of documents, document components, document type

Returning to the rejections presented by the Office, the Office first cites portions of col. 5 of Poole as disclosing "establishing a software architecture for a set of rules." The portions of col. 5 of Poole cited by the Office, however, only disclose manual specification or selection of content based on an individual's personal understanding and application of business, legal, or governmental rules, NOT a software architecture for a set of rules.

Second, the Office cites portions of col. 12 of Poole as teaching "establishing a software architecture for a set of rules to be embedded in documents." Again these portions merely disclose a document developer manually specifying desired copy setup, margins, paper size, etc. through a dialog box 270 (shown in Fig. 17), and make no mention of the application of rules or where such rules are stored.

Applicant also notes that Poole notifies a user if document properties entered by the user via the dialogs are compliant with document regulations. Col. 12, lines 19-21. As a consequence, the rules would need to be accessible and executable at the time the user enters the document properties, most likely by the dialog itself, in order to provide error checking in a real-time or near real-time fashion. Therefore, the rules governing compliant document properties would not be embedded in a document. In addition, all rules disclosed in Poole are stored in the knowledge base, and Poole does not teach that rules are embedded in the documents produced by the document generating system.

Therefore, Poole does not teach or suggest embedding rules in documents and embedding error-checking rules defined in Poole in a document created by the document generation system disclosed in Poole would not be inherent or obvious, since the rules would need to be executed by the dialogs presented to the user.

In addition, Poole does not teach or suggest "creating a dynamic document structure that can resolve to one or more instances of a document and that is configured to include one or more embedded rules based on the architecture for a set of rules," as recited in amended Claim 1. As

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definitions, catalogs, **rules**, links, and other information needed to construct any number of document and form types." Col. 6, lines 17-22 (emphasis added); "Knowledge is preferably entered into the Knowledge Base by a domain expert who is experienced in some field of domain of human knowledge. At step 103, the knowledge is entered into the Knowledge Base in units of text or text fragments referred to herein as components. At step 105, the **rules** that dictate the access and utilization of components are also entered into the Knowledge Base." Col. 6, lines 29-35 (emphasis added).

disclosed in Poole, after the document developer selects the appropriate entity references, "the resolved . . . [entities (not rules) are] returned and made available for incorporation into a document in the form of a corresponding document component" (col. 7, lines 10-14). In addition, Poole discloses that a "significant advantage of the document construction methodology illustrate in FIG. 1 concerns the ability to integrate components selected from the stream 40 of components into SGML documents of varying types and styles. Document-X 44, for example, is shown as having been constructed using resolved and validated components A, B, C, and N in accordance with a first document structure and format style. Document-Y 46 and Document-Z 48 are shown as having been constructed using the same components A, B, C, and N to produce documents having differing structures and format styles. It is noted that other documents can be constructed using one or more of the components A, B, C, and N. It can be seen that any number of documents can produced with desired structural and stylistic requirements, and published in printed or electronic form" (col. 5, lines 25-39).

As further disclosed in Poole, "[i]t is noted that the format style of the document, as well as any of the document components corresponding to the resolved entity references, is typically determined after completing the resolution process, but may alternatively be determined during the resolution process" (col. 7, lines 17-22).

Therefore, although the resolved components can be manually or automatically formatted and/or incorporated into one or more documents based on a document structure or form, Poole does not teach or suggest that the resolved components or the documents that will contain the resolved components include embedded rules. In fact, embedding rules in the resolved components would cause the components to be considered "unresolved," since they would not be useable in a document in their present form (e.g., additional processing would be necessary to resolve the rules). In addition, as noted above, since Poole does not disclose establishing a software architecture for a set of rules to be embedded in documents that define content to be included in documents, Poole clearly does not teach or suggest creating a structure that includes rules based on the architecture for a set of rules.

In summary, Poole does not teach or suggest "establishing a software architecture for a set of rules, where each rule in the set of rules is configured to be embedded in one or more computer-processable documents, the documents consisting of a plurality of components, the set

of rules defining content to be included in each instance of the one or more computer-processable documents," as recited in amended Claim 1. Poole also does not teach or suggest "creating a dynamic document structure that resolves to one or more instances of a document and that is configured to include document content including one or more embedded rules based on the architecture for a set of rules," as recited in amended Claim 1. Accordingly, for at least the reasons set out above, independent Claim 1 is allowable and dependent Claims 2-13, which depend from independent Claim 1, are also allowable.

B. Independent Claim 16

As described above with respect to Claim 1, Poole does not teach or suggest establishing a software architecture for a set of rules configured to be embedded in documents, where the documents consist of a plurality of components, the set of rules defining content to be included in documents. Therefore, Poole does not teach or suggest "retrieving one or more cross-referenced document components from a data base, the one or more document components configured to include document content, one or more embedded rules, the one or more embedded rules defining content to be included in documents" as recited in amended Claim 16.

Furthermore, as noted, Poole actually discloses storing document components in a knowledge base separate from rules that are also stored in the knowledge base. In particular, Poole discloses that "at step 103, the knowledge is entered into the Knowledge Base in units of text or text fragments referred to as components. At step 105, the rules that dictate the access and utilization of components are also entered into the Knowledge Base" (col. 6, lines 31-35). Therefore, although Poole discloses using rules during the resolution process in order to determine document components, Poole does not teach or suggest retrieving document components that include embedded rules from a knowledge base. Storing rules in a knowledge base that also stores document components is not equivalent to embedding rules in document components and then storing the document components in a knowledge base. Therefore, Poole, among other elements, does not teach or suggest "retrieving one or more cross-referenced document components from a data base based on the transaction data set, the one or more document components configured to include one or more embedded rules, the one or more rules defining content to be included in documents," as recited in amended Claim 16.

Accordingly, for at least the reasons set out above, independent Claim 16 is allowable and dependent Claims 17-27, which depend from independent Claim 16, are also allowable. Similar rationale can be applied to independent Claim 28, as amended, and the claims that depend on Claim 28. Therefore, Claims 28-30 are allowable for at least one or more of the reasons set forth above with respect to Claim 16.

III. Claims Rejections – 35 U.S.C. § 103(a)

Claims 2-11, 14-15, 18-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Poole in further view of printed publication "XML in a Nutshell" authored by Harold et al. (hereinafter referred to as "Harold").

A. Independent Claims 14 and 15

Claims 14 and 15 recite, *inter alia*:

> A method of generating a document, the method comprising:
>
> establishing a software architecture for a set of rules configured to be embedded in documents by creating a schema having a conditions element, a choose element, an iterators element, a functions element, and an external interface element that is configured to be resolved into a value, the set of rules defining content to be included in documents; ...

As described above with respect to Claim 1, among other elements, Poole does not teach or suggest establishing a software architecture for a set of rules to be embedded in documents wherein the set of rules define content to be included in documents. Harold does not cure the deficiencies of Poole. In contrast, Harold merely discloses standard elements and functions associated with the extensible markup language ("XML"). Although Harold may disclose means for establishing an architecture for a set of rules (e.g., the architecture may be based on XML), Harold makes no mention whatsoever of establishing an architecture for a set of rules, wherein the rules are to be embedded in documents and define content to be included in documents. Therefore, independent Claims 14 and 15 are allowable for at least the additional reasons set forth above.

B. Dependent Claim 2-11 and 18-27

Dependent Claims 2-11 and 18-27 depend from independent Claims 1 and 16 respectively and, therefore, are allowable for at least the reasons set forth above with respect to Claims 1 and 16. Nonetheless, Applicant provides additional explanation regarding the allowability of these claims.

As noted above, Poole does not teach or suggest establishing a software architecture for a set of rules to be embedded in documents where the rules define content to be included in documents or "creating a dynamic document structure that can resolve to one or more instances of a document and that is configured to include one or more rules based on the architecture for a set of rules," as recited in amended Claim 1. As also noted above with respect to Claim 16, Poole does not teach or suggest "retrieving one or more cross-referenced document components from a data, the one or more document components configured to include one or more embedded rules, the one or more embedded rules defining content to be included in documents" as recited in amended Claim 16. Harold does not cure the deficiencies of Poole. As described above with respect to Claims 14 and 15, Harold does not teach or suggest establishing a software architecture for a set of rules, wherein the rules are to be embedded in documents and define content to be included in documents. In contrast, Harold merely discloses standard elements and functions associated with the extensible markup language ("XML"). Therefore, Claims 2-11 and 18-27 are allowable for at least the additional reasons set forth above.

V. Response to Examiner's Comments

The Examiner equates a document construction methodology to an architecture. This is a distortion of the word "architecture." An architecture is a physical design, like the architecture of a building, the architecture of a software program, or the architecture of a data structure. And in claim 1, for example, the architecture is for the set of rules, not the document. (Claim 1 reads, in relevant part, "establishing a software architecture for a set of rules."). Thus, constructing a document is not the same as defining an architecture for a set of rules.

Regarding the comments that the rules in Poole are embedded in the document, it simply amazes the Applicant that the Office continues to interpret Poole in this fashion when the explicit statements of Poole indicates that the rules are in the Knowledge base. In fact, despite assertions to the contrary, the Office admits that Poole store its rules in the knowledge base, not in the

documents. The Examiner states, "In addition, the Knowledge Base includes rules being stored." Page 13 of the Office Action Dated May 3, 2007. The Office continues to rely on the fact that Poole mentions that document developers develop content to meet rules (such as rules published by the government). However, Poole's statement simply means that content can be developed to comply with general rules such as government rules, NOT that the general rules are embedded in a document. If anything, what gets placed in the document by the developer or author is the content. The rule is lost when the author makes the determination. For example, for purposes of addressing the Examiner's arguments only, consider a hypothetical scenario where a general rule is SLOPE = mX + B. If an author complies with the rule, SLOPE gets put in the document. However and in direct contradiction to the Examiner's assertion, since the rule is complied with, the rule does not get put in the document. There's no need for it.

The claimed subject matter does not require (or at least diminishes) the need to have a human author or developer pick and chose what content to include in an instance of a document. And, as already noted, the Applicant is not claiming general rules in the abstract. Rather the applicant is claiming, as in claim 1, for example, a software-architecture for a set of rules, where each rule is configured to be embedded in one or more computer-processable documents, where the rules determine what content gets put in a document, and are resolved or executed to create an instance of a document.

Regarding claims 12-14, the Examiner asserts that the features relied upon are not in the claims. Claim 14 has been amended to include the term "embedded." Further, as noted above, the Office is required to interpret the claims in a reasonable manner. MPEP § 2111. So, while limitations of the specification are not to be read into the claims, the claims can NOT be read in a vacuum either.

Regarding the comments on page 13 of the May 3rd Office Action, the Office cites to col. 7, lines 31-40 and lines 28-60 and col. 5 lines 3-34 of Poole. The Office asserts that these sections teach that the document components are linked to regulations and that the content of the regulation is included in a final document. The Office concludes that the regulations are rules which are "embedded" in the document. Assuming, only for the sake of argument, that the Office is correct in its assertions about the teachings of Poole, what the Office essentially contends is that any document that includes a list of rules has rules embedded in it in the context

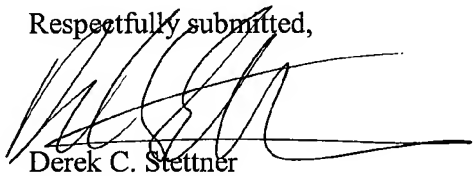
of the claimed subject matter. This is incorrect. Admittedly, Pooles does state that "[t]he Inference Engine 28 resolves entity reference &1 to document component-A 66 which is linked to paragraph-1 94 of regulation Z-90. The content of regulation-Z 90 may then be incorporated into a final document 65 by referencing document component-A 66." Col. 7, lines 58-60 of Poole. But in this case, regulation 90 (just like any document with a list of general rules) is simply part of the final **content** of the document. The regulation does not determine what content is included in the document, by for example, a resolution process, as claimed, for example, in claim 1.

V. Conclusion

In light of the above, Applicant believes that the application is in condition for allowance and respectfully requests that a timely Notice of Allowance be issued in this case. Applicant also requests that the Examiner telephone the attorneys of record in the event a telephone discussion would be helpful in advancing the prosecution of the present application.

Charge or credit Deposit Account No. 13-3080 with any shortage or overpayment of the above fee.

Respectfully submitted,



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